Module 9:

Prenatal Nutrition

Table of Contents

Overview

Introduction	This module will help you assess the pregnant woman's nutritional status and provide individual education.
Learning Objectives	After completing this module, the CNW will be able to: • describe prenatal growth and development; • describe the general nutritional needs of pregnant women; • describe common nutrition-related problems of pregnant women and identify solutions to these

problems;

- describe the effects of substance abuse on the mother and child;
- identify indicators of <u>nutritional need</u> that make a pregnant woman eligible for WIC;
- in a case study situation, assess prenatal growth, assess biochemical and clinical status, and evaluate the diet of a pregnant woman using the <u>Food Guide Pyramid</u>; and
- in a role-play situation, interview a pregnant woman, assess her nutritional status, prioritize her needs, and provide individual education.

*Words that you may not know are **underlined**. Definitions for these words can be found in the **Glossary** at the end of the module. (Note: Words are only underlined the first few times they appear in the text.)*

Prenatal Growth & Development

Normal Growth & Development	A full-term baby develops in **38 weeks**, or **9 months**.
Trimesters	The 9 months of pregnancy are divided into 3 <u>trimesters</u>. A trimester is 3 months long.
Conception	Pregnancy begins with <u>conception</u>. Conception is when a man's sperm fertilizes a woman's egg.
Fertilized Egg	After conception, a fertilized egg moves to the <u>uterus</u>. In the uterus, the fertilized egg divides into many cells. The fertilized egg is called: • an <u>embryo</u> for the first 8 weeks of life and • a <u>fetus</u> after 8 weeks.
Chart	The chart on the next pages describes what happens to the pregnant woman and her unborn baby during each of the 3 trimesters.
Learning Activity 1	To learn more about the 3 trimesters of pregnancy, you may want to try **Learning Activity 1** found at the end of this module.

Prenatal Growth & Development (continued)

Trimesters of Pregnancy

First Trimesters (Conception – Week 13)

Mother:
- May feel more sleepy than usual; feel nauseated; need to urinate often; have tingly and tender breasts, heartburn, indigestion, vomiting and/or constipation.
- Uterus and its supporting muscles increase in size, strength and flexibility.
- Placenta develops to:
  - ➢ carry nutrients and oxygen from mother to the fetus and
  - ➢ carry carbon dioxide and other wastes away from the fetus to the mother.
- Amniotic sac (the inner layer of membrane around the fetus, also called the amnion or "water bag") fills with fluid to:
  - ➢ cushion the developing baby from injury,
  - ➢ keep the fetus at a normal body temperature, and
  - ➢ let the fetus move easily.
- Breasts grow and change in preparation for breastfeeding.
- Blood volume increases by 50% to carry extra nutrients and waste products.

Embryo/Fetus:
- Cells grow and develop specific functions (such as red blood cells and nerve cells).
- All organs and structures found in full-term newborns develop.
- Heart begins to beat.
- Urinary and circulatory systems are functioning.
- Sex organs develop internally, but it is difficult to tell if the baby will be a boy or a girl.
- Size:
  - ➢ At first month, embryo is 1/5 inch long.
  - ➢ By the end of the 1st trimester, fetus is about 2½ - 3 inches long and weighs about ½ ounce.

This trimester is the most critical phase of human development. Anything that interferes with development at this time (such as exposure to drugs, alcohol, viruses, chemicals, and/or radiation) could cause birth defects or possibly kill the embryo/fetus.

Prenatal Growth & Development (continued)

Trimesters of Pregnancy (continued)

Second Trimester (Week 14 – Week 26)

Mother:
- May not need to urinate as often and has less nausea and vomiting than in the first trimester.
- May feel tired and have constipation, heartburn and/or indigestion.
- Breasts no longer feel tender, but have definitely gotten bigger.

Embryo/Fetus:
- Fetus is able to suck and swallow.
- Fetus kicks and moves enough to be felt by the mother.
- Fingers and toes are more recognizable.
- Hair grows on head; eyebrows and eyelashes are beginning to grow.
- Eyes are able to open.
- Size:
  - ➢ At 4th month, fetus is about 4 inches long.
  - ➢ By end of 6th month, fetus weighs about 1¾ pounds and is about 13 inches long.

A 6-month old fetus has a chance of survival if born premature.

Third Trimester (Week 27 – Birth)

Mother:
- Most women feel less tired.
- Women may have more heartburn and indigestion and need to urinate more often as the fetus gets bigger.
- Women may have leg cramps and swelling.
- Women begin to think about such things as infant clothes, a place for the baby to sleep, a car seat, and/or what will happen during labor.

Embryo/Fetus:
- Brain and nervous system develop further.
- Fetus can see and hear.
- Fetus moves around a lot during the 7th and 8th months.
- Size: At birth, an average baby weighs about 7½ pounds and is about 20 inches long**.**

Nutritional Needs of Pregnant Women

Importance of Pregnant Woman's Diet	What a woman eats during her pregnancy may affect: • fetal development, • delivery, and • the woman's comfort and emotions.
Fetal Development	The food choices a woman makes during her pregnancy will greatly affect her baby's health. Women with poor diets are much more likely to have children who: • are stillborn, • are premature, or • have birth defects. In the first trimester, a lack of the nutrient folate may result in spinal cord defects. In the third trimester, lack of protein and calories can cause problems with brain development.
Pre-Term Delivery	Women with healthy diets are less likely than women with poor diets to deliver early.
Comfort of the Pregnant Woman	Fatigue, morning sickness, constipation, leg cramps, and other pregnancy discomforts can be reduced or prevented with a good diet. A good diet may also help the pregnant woman's emotional state. It can help moderate mood swings.
Nutrition Recommendations	The chart on the next page lists general nutrition recommendations for pregnant women.

Nutritional Needs of Pregnant Women (continued)

**General Nutrition Recommendations
For Pregnant Women**

- Eat a variety of foods.

- Eat the recommended servings from each food group using the *Food Guide Pyramid* as a guide.

- Gain weight as recommended according to her pre-pregnancy weight and trimester.

- Take daily supplements as recommended by the health care provider.

- Avoid:
  - weight reduction diets
  - sodium-restricted diets and diuretics
  - harmful substances (such as alcohol, tobacco and drugs)
  - excessive fat, salt, caffeine, sugar, and artificial sweeteners

Nutritional Needs of Pregnant Women (continued)

Recommended Diet

A pregnant woman's diet should have the nutrients and calories needed to support changes in her body and to help the fetus grow and develop.

Recommended Food Group Servings

Use the *Food Guide Pyramid* and the *Food Group Servings for Prenatal Women* chart on the following pages to guide you when talking to a pregnant participant.

Pregnant women whose caloric needs are low or moderate (such as women who are not physically active) should eat at the low end of the range of servings. Women whose caloric needs are high (such as women who are physically active) should select additional servings from the food groups.

Pregnant women under 24 years old have slightly greater nutritional needs than women over 24 years. Pregnant women under 24 years old should have **4** servings of food from the Milk Products group to get the calcium they need for bone growth.

Nutritional Needs of Pregnant Women (continued)

Food Guide Pyramid-
Pregnant Women

Fats, Oils, and Sweets

Milk Products
3-4** Servings

Protein Foods
2-3 Servings

Vegetables
3-5 Servings

Fruits
2-4 Servings

Breads, Grains and Cereals
6-11 Servings

** 4 servings milk products for women less than 24 years old

Nutritional Needs of Pregnant Women (continued)

Food Group Servings for Pregnant Women

Food Group	Servings	Foods
Breads, Cereals & Grains	6-11	Bread, tortilla, crackers, roll, bun, bagel, muffin, biscuit, pancake, cooked rice, noodles, macaroni, spaghetti, cereal
Vegetables	3-5	Vitamin A-Rich Vegetables: Carrot, greens, tomato, spinach, winter squash, sweet potato, bok choy, red bell pepper, red chili pepper Vitamin C-Rich Vegetables: Broccoli, tomato, cabbage, cauliflower, bell pepper, chili pepper Other Vegetables: Potato, peas, green beans, corn, lettuce, summer squash, zucchini, asparagus
Fruits	2-4	Vitamin A-Rich Fruits: Cantaloupe, apricot, mango, papaya Vitamin C-Rich Fruits: Orange, lemon, tangerine, cantaloupe, strawberry, kiwi, grapefruit, mango, papaya, orange juice, grapefruit juice, juices with Vitamin C Added Other Fruits: Apple, banana, grapes, peach, nectarine, raisins, pear, watermelon, pineapple

Nutritional Needs of Pregnant Women (continued)

Food Group Servings for Pregnant Women
(continued)

Food Group	Servings	Foods
Milk Products	3-4**	Milk, yogurt, cheese, cottage cheese *Eat mostly non-fat or low-fat milk products.*
Protein Foods	2-3	<u>Vegetable Protein</u>: Cooked dry beans or peas, peanut butter, nuts, seeds, soy products (such as tofu) <u>Animal Protein</u>: Chicken, turkey, fish, beef, pork, eggs

**4 servings for women less than 24 years old

Nutritional Needs of Pregnant Women (continued)

Adequate Weight Gain

Adequate weight gain is closely related to good pregnancy outcome.

The amount of weight a pregnant woman should gain will depend on:
- her weight before she became pregnant,
- her age (teenagers have greater needs),
- the number of fetuses she is carrying (twins, triplets, etc.), and
- her health status (such as if she has diabetes or high blood pressure).

Total Weight Gain Recommendations

WIC recommends that most pregnant women gain between **25** to **35 pounds**.

The chart below shows recommended total weight gain ranges for pregnant women by <u>body mass index (BMI)</u> and pre-pregnancy weight.

Total Weight Gain Recommendations

BMI	Pre-Pregnancy Weight	Total Weight Gain
<19.8	Underweight	28-40 pounds
19.8 – 26.0	Normal weight	25-35 pounds
26.0 - 29.0	Overweight	15-25 pounds
>29.0	Obese	At least 15 pounds

Nutritional Needs of Pregnant Women (continued)

**Monthly
Weight Gain
Recommendations**

Not every woman will gain weight at the recommended rates. A woman who has nausea and vomiting during the first 4 or 5 months of her pregnancy will most likely not meet the recommendations.

If a woman has trouble gaining weight, she should at least maintain her weight.

The chart below shows recommended minimum monthly weight gains for the **second** and **third trimesters** for single fetus pregnancies by pre-pregnancy weight.

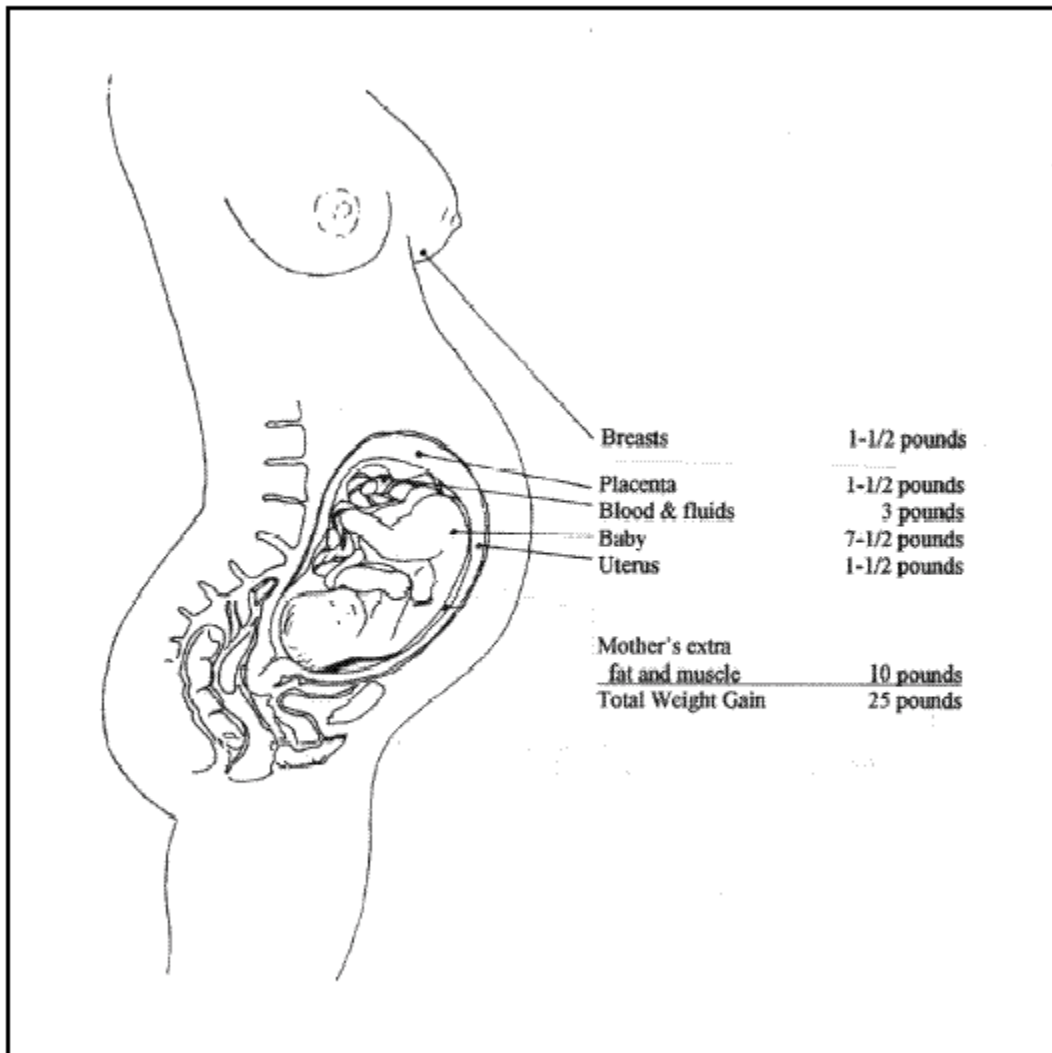| Pre-Pregnancy Weight	Minimum Monthly Weight Gain
Underweight	4 pounds
Normal Weight	2 pounds
Overweight	2 pounds
Obese	1 pound

**Where Do the
Pounds Go?**

Why does a pregnant woman need to gain about 25-35 pounds (a lot of weight!) for a 7½ pound baby?

The diagram on the next page shows how the pregnant woman and her fetus use this weight.

Nutritional Needs of Pregnant Women (continued)

Where the Pounds Go…

Breasts	1-1/2 pounds
Placenta	1-1/2 pounds
Blood & fluids	3 pounds
Baby	7-1/2 pounds
Uterus	1-1/2 pounds
Mother's extra fat and muscle	10 pounds
Total Weight Gain	25 pounds

Nutritional Needs of Pregnant Women (continued)

Not Enough Weight Gain	A baby whose mother does NOT gain enough weight during her pregnancy is more likely to: • grow poorly in the uterus, • be small for age, and/or • be born prematurely.
Too Much Weight Gain	A baby whose mother gains too much weight during her pregnancy may have: • a high birth weight, • a <u>Cesarean section</u> delivery, and/or • birth trauma. A woman who gains too much weight during her pregnancy may have: • gestational diabetes, • difficulty at delivery, • high blood pressure, and/or • problems losing weight after the baby is born.
Calories	Calories give the pregnant woman energy for her body to function. If the pregnant woman does not take in enough calories to meet the needs of pregnancy, her body will use protein for energy. This can harm the fetus since it needs protein for growth. If the pregnant woman takes in too many calories, she will gain too much weight and may have problems losing the weight after delivery. The chart on the next page gives guidelines for the number of calories needed during pregnancy.

Nutritional Needs of Pregnant Women (continued)

Calories (continued)

Calories Needed during Pregnancy

A Woman Who Is:	Additional Calories Needed Each Day
• Underweight • Expecting twins, triplets…	>300
• Normal weight	300*
• Overweight or Obese	<300

a woman could get 300 calories by drinking a glass (8 ounces) of 1% milk, plus eating a flour tortilla and a banana.

Fluids

During pregnancy, a woman's need for fluids increases.

Fluids are needed by both the fetus and by the woman. Extra fluids help the pregnant woman:
- avoid constipation,
- reduce excessive swelling,
- help the body get rid of waste products, and
- reduce the risk for urinary tract infection.

A pregnant woman should consume at least 8 cups of fluids of a day. Fluids can include milk, juice, water, soup, and low calorie beverages.

Nutritional Needs of Pregnant Women (continued)

Fluids (continued)

Pregnant women should cut down on the amount of caffeinated products they drink. Coffee, tea, cola-flavored sodas, and coca products are usually high in caffeine. (Drinking large amounts of caffeinated products may lead to prenatal problems such as miscarriage.)

Lactose Intolerance

Lactose is a sugar found in milk and some milk products. Lactose intolerance is a condition in which the body cannot break down lactose, resulting in symptoms such as diarrhea and abdominal cramps.

Since most people with lactose intolerance can digest small amounts of lactose, a pregnant woman with lactose intolerance should try to:
- drink small amounts of milk (about ½ cup of milk several times a day, rather than a large amount at one time) and
- eat or drink milk products with other foods.

If a pregnant woman cannot tolerate any milk products, she should be referred to the Nutritionist to help her choose other foods high in calcium and protein. (The Nutritionist may suggest that she substitute products that do not contain lactose {such as hard cheese or yogurt} for milk and/or drink reduced lactose milk products such as acidophilus or lactose-free milk.)

Pregnancy-Related Problems & Solutions

Problems

There are several common problems that a pregnant woman may have. These include:

- anemia,
- <u>constipation</u>,
- heartburn,
- <u>hermorrhoids</u>,
- leg cramps,
- nausea, and
- swelling.

Learn more about these problems and their solutions so that you can help pregnant participants identify solutions.

Chart of Problems & Solutions

The chart on the following pages lists some common problems that pregnant women may have and some possible solutions.

Learning Activity 2

To learn more about some of the pregnancy issues at WIC, you may want to try **Learning Activity 2** found at the end of this module.

Pregnancy-Related Problems & Solutions (continued)

Common Problems & Solutions

Problem	Solution(s)
Anemia (low iron levels in the blood)	*Refer to Healthcare Provider if Hemoglobin is outside of "Nutritionist" range of values for two consecutive Certifications (see Anemia Cutoff Tables in your clinic).* • Eat iron-rich foods (such as meat, beans and iron-fortified cereals) along with Vitamin C-rich foods (such as orange juice, tomatoes, and broccoli). Vitamin C helps the body with iron absorption. • Cook foods in cast-iron cookware. • Take prenatal vitamins or iron supplements on an empty stomach (unless there are side effects such as nausea or stomach pain). • Decrease intake of coffee and tea (they interfere with iron absorption).

Pregnancy-Related Problems & Solutions (continued)

Common Problems & Solutions (continued)

Problem	Solution(s)

Constipation
(less often than usual or difficult bowel movements) may be due to:
• being tired,
• medications,
• anxiety, and/or
• inappropriate diet
	Do NOT use laxatives unless advised by a doctor *(some products can harm the fetus).*
	
	• Drink:
	  ➢ plenty of fluids to help keep the stool soft,
	  ➢ small amounts of prune juice, and/or
	  ➢ hot or very cold liquids to bring on a bowel movement.
	
	• Eat high-fiber foods (such as bran cereals, whole-grains, dried fruits, fresh fruits and vegetables).
	
	• Do mild exercise (such as walking) each day.
	
	• Do not force bowel movements.
	
	• Do NOT use mineral oil since it interferes with absorption of fat-soluble vitamins.

Pregnancy-Related Problems & Solutions (continued)

Common Problems & Solutions (continued)

Problem	Solution(s)
Heartburn	***Do NOT use medications unless advised by a doctor*** • Eat: 　➢ several small meals and snacks instead of large meals 　➢ small amounts of bland food between meals (this helps absorb the stomach acid) 　➢ slowly and chew well to avoid swallowing large chunks of food • Do NOT eat immediately before going to bed. (Last food should be 2-3 hours before bedtime.) • Avoid foods that are fried, fatty, spicy, or contain caffeine. • Drink plenty of fluids. • Drink milk or eat several crackers. • Avoid lying down flat. Raise the head when sleeping. • Do mild exercise (such as walking). • Sit quietly and breathe deeply. • Do NOT wear clothes that are tight around the waist.

Common Problems & Solutions (continued)

Problem	Solution(s)
Hemorrhoids	***Do NOT use medications unless advised by a doctor*** *(some products can harm the fetus).* • Sit in a warm bath for 15-20 minutes. • Apply Witch Hazel with cotton balls. (Refrigerated Witch Hazel may be more soothing since it is cold.) • Apply an ice pack to the area. • Use recommendations for treating constipation (since straining due to constipation often causes hemorrhoids).

Pregnancy-Related Problems & Solutions (continued)

Common Problems & Solutions (continued)

Problem	Solution(s)

Leg Cramps	• Get enough calcium by eating or drinking milk products.
	
	• Get enough magnesium by eating plenty of vegetables.
	
	• Eat only the recommended servings of protein foods.
	
	• Limit intake of processed foods and carbonated beverages.
	
	• To increase blood flow in legs:
	  ➢ do mild exercise (such as walking),
	  ➢ stretch calf muscles and curl the toes,
	  ➢ take a warm bath, and/or
	  ➢ place a hot water bottle or a towel soaked in hot water over the cramped muscle.

Common Problems & Solutions (continued)

Problem	Solution(s)

Nausea	• Eat:
	  ➢ crackers, dry cereal or toast before getting out of bed in the morning
	  ➢ small amounts of food every few hours
	  ➢ a light bedtime snack.
	
	• Avoid fried, fatty, spicy, or strong smelling foods.
	
	• Drink fluids between meals instead of with meals.
	
	• Move slowly and avoid sudden movements.
	
	• Have someone feed and clean up after pets to avoid pet odors.
	
	• Avoid brushing teeth immediately after waking up. (Putting things in the mouth may cause nausea.)

Pregnancy-Related Problems & Solutions (continued)

Common Problems & Solutions (continued)

Problem	Solution(s)
Swelling	• Avoid standing for long periods of time. • Rest with legs elevated. • Lie on your side. • Wear loose fitting clothing and avoid tight pants, garters, and/or knee-high stockings. • NEVER use diuretics or "water pills" because they can cause a dangerous fluid imbalance in the body. *Pregnancy-Induced Hypertension* (PIH) is high blood pressure that may occur during pregnancy. ***A woman with PIH should get immediate medical care.*** *PIH symptoms include:* • *a puffy face for more than 12 hours,* • *swelling in the hands,* • *headaches,* • *vision problems, &* • *a rapid increase in weight.*

Substance Abuse

Definition

Substance abuse (or drug abuse) is the use of alcohol, tobacco, recreational drugs, and over-the-counter and prescription medications in a manner that is not medically or legally approved.

Substance Use During Pregnancy

Substance use during pregnancy can cause serious problems for the mother and fetus. A woman who abuses drugs during her pregnancy is more likely to give birth to an infant with:
- low birth weight,
- hepatitis,
- human immunodeficiency virus (HIV),
- developmental problems,
- birth defects, and
- early death.

The most common drug used during pregnancy is nicotine. Nicotine is the drug linked to smoking tobacco.

The second most common drug used during pregnancy is alcohol.

Chart of Common Drugs

The chart on the next pages list effects for the following groups of drugs:
- alcohol,
- depressants,
- hallucinogens,
- inhalants,
- marijuana,
- narcotics,
- nicotine, and
- stimulants.

Substance Abuse (continued)

Effects of Some Common Drugs

Drug Type & Common Names	Effects

Alcohol	• Problems for mother:
	  ➢ Impaired judgment (may result in abuse and neglect of child)
	  ➢ Cancer, heart and liver damage
	  ➢ Miscarriage
	• Problem for child:
	  ➢ Low birth weight
	  ➢ Fetal Alcohol Syndrome
	  ➢ Low IQ
	  ➢ Developmental delays

Depressants
• "Barbs" (Barbiturates)
• "Downers"
• Sedatives
• Tranquilizers
	• Problems for child:
	  ➢ Addiction and life-threatening withdrawal
	  ➢ Heart and artery damage
	  ➢ Defects in lips and mouth
	  ➢ Malformed joints
	  ➢ Breathing problems
	  ➢ Internal bleeding
	  ➢ Poor coordination and reflexes
	  ➢ Deafness
	  ➢ Developmental delays

Hallucinogens
• "Acid" (LSD)
• "Angel Dust" (PCP)
• "Mesc" (Mescaline)
• "Magic Mushrooms" (Psilocybin)
• "Ecstasy"
	• Problems for mother:
	  ➢ Miscarriage
	• Problems for child:
	  ➢ Abnormal movements
	  ➢ Rapid mood changes
	  ➢ Poor coordination
	  ➢ Poor communication skills

Substance Abuse (continued)

Effects of Some Common Drugs

Drug Type & Common Names	Effects

Inhalants
 • "Poppers" (Amyl nitrite)
 • "Laughing Gas"
 • "Rush"
 • Isopropyl Nitrite
 • Glue
 • Gasoline
 • Paint Thinner
 • Correction Fluid (ie: White Out)
	• Problems for mother:
	   ➢ Dangerously high blood pressure
	   ➢ Miscarriage
	   ➢ Stillbirth
	 • Problems for child:
	   ➢ "Fetal Solvents Syndrome" (problems similar to Fetal Alcohol Syndrome)
	   ➢ Lead poisoning if substance contains lead

Marijuana/Cannabis
 • "Grass"
 • "Pot"
 • "Weed"
 • "Smoke"
 • "Hash"
	• Problems for Mother:
	   ➢ Changes in mother's hormones
	   ➢ Stillbirth
	   ➢ Miscarriage
	 • Problems for child:
	   ➢ Low birth weight
	   ➢ Premature birth
	   ➢ Newborn behavioral problems (shivers, irritability, difficulty adjusting to light)
	   ➢ Birth defects (linked to heavy usage)
	   ➢ Delayed growth

Substance Abuse (continued)

Effects of Some Common Drugs

Drug Type & Common Names	Effects

Narcotics
• Opiates
• Codeine
• Heroin
• Morphine synthetics
• Demerol
• Darvon
• Methadone
• Percodan
• *"Designer Drugs"*
	• Problems for mother:
	  ➢ Miscarriage
	• Problems for mother and child:
	  ➢ Addiction
	  ➢ Hepatitis
	  ➢ HIV-infection
	• Problem for child:
	  ➢ Dangerous withdrawal
	  ➢ Slowed growth
	  ➢ Learning disabilities
	  ➢ Early infant death

Nicotine
Drug found in tobacco
	• Problems for Mother:
	  ➢ Addiction
	  ➢ Cancer, lung and heart disease
	  ➢ Miscarriage
	  ➢ Stillbirth
	• Problems for child:
	  ➢ Premature birth
	  ➢ Low birth weight
	  ➢ Asthma and other lung problems
	  ➢ Premature death

Stimulants
• "Uppers"
• "Speed"
• "Crank"
• "Meth" (Methamphetamines)
• "Crystal"
• "Glass"
• "Coke" (Cocaine)
• Diet Pills
	• Problems for Mother:
	  ➢ Miscarriage
	  ➢ Stillbirth
	• Problems for child:
	  ➢ Premature birth
	  ➢ Heart, brain and liver damage
	  ➢ Abnormal bone, stomach, kidney and intestine development
	  ➢ Sudden Infant Death Syndrome (SIDS)

Indicators of Nutritional Need

Charts of Indicators of Nutritional Need

The 4 charts on the next pages list and describe for pregnant women:

- indicators of nutritional need (anthropometric, biochemical, clinical, and dietary).

Learning Activity 3, 4, and 5

To learn more about how to provide nutrition education to a pregnant woman, you may want to try **Learning Activity 3, Learning Activity 4,** and **Learning Activity 5** found at the end of this module.

Indicators of Nutritional Need (continued)

Indicator	Description
Underweight	Pre-pregnancy BMI <19.8
Overweight	Pre-pregnancy BMI between 26.1 - 29.0
Very Overweight	Pre-pregnancy BMI >29.0
Low Weight Gain/ Weight Loss	1. Low rate of weight gain during 2nd or 3rd trimesters such that: • underweight women gain < 4 lbs/month • normal/overweight women gain < 2 lbs/month • obese women gain < 1 lb/month 2. Low weight gain at any point in pregnancy 3. Weight loss: • ≥ 4 lbs during 1st trimester • ≥ 2 lbs during 2nd and 3rd trimesters
Inadequate Weight Gain/ Moderate Weight Loss	In 1st trimester: • inadequate weight gain or • moderate weight loss of < 4 lbs
High Maternal Weight Gain Rate	Weight gain >7 lbs per month during all trimesters for all pre-pregnancy weight groups

Indicators of Nutritional Need (continued)

Indicator	Description
Low Hemoglobin/ Hematocrit	As determined by altitude, trimester and smoking status (see CDC guidelines) If value is outside of "Nutritionist" range of values for two consecutive Certifications, refer to health care provider.
Other Medical conditions	• Hereditary condition that causes physical or metabolic abnormality • Condition must alter nutritional status metabolically and/or mechanically • Examples include sickle cell anemia and thalassemia major
Lead Poisoning	Blood lead level ≥ 10 mcg/dl within past 12 months

Indicators of Nutritional Need (continued)

Indicator	Description
Current Gestational Diabetes Mellitus	Diabetes diagnosed by a physician
History of Gestational Diabetes Mellitus	Any history of gestational diabetes
Current Pregnancy Hypertension	High blood pressure during current pregnancy
Fetal Growth Restriction	Delayed uterine growth
Hyperemesis Gravidarum	Severe nausea and vomiting causing dehydration and acidosis
History of Preterm Delivery	Delivery ≤37 weeks
History of Low Birthweight	Birthweight ≤2500 g or 5 lbs, 8 oz
Fetal Death	Fetal death ≥20 weeks gestation
Neonatal Death	Newborn death ≤28 days after birth

Indicators of Nutritional Need (continued)

Indicator	Description
History of Spontaneous Abortion, Fetal or Neonatal loss	History of: • 2 or more spontaneous terminations at <20 weeks or <500 g OR • fetal or neonatal death
Closely Spaced Pregnancy	Conception before 16 months postpartum
Multifetal Gestation	Expecting twins, triplets or more
History of a Large for Gestational Age Infant	History of birth weight of: • ≥9 lbs (or 4,000 g) OR • ≥90th percentile weight for gestational age at birth
History of Birth with Nutrition-Related Congenital or Birth Defect	History of congenital or birth defect related to inappropriate nutritional intake such as inadequate intake of zinc or folic acid or excess of Vitamin A
Diabetes Mellitus	Diabetes Mellitus Type 1 or 2
Chronic Hypertension	Current high blood pressure

Indicators of Nutritional Need (continued)

Indicator	Description
Renal (Kidney) Disease	Current kidney disease, including, but not limited to: • pyelonephritis • persistent proteinuria
Gastrointestinal Disorders	Current disease or condition that interferes with intake or absorption of nutrients, including, but not limited to: • stomach or intestinal ulcers • small bowel enterocolitis and syndrome • inflammatory bowel disease (such as ulcerative colitis or Crohn's disease) • liver disease • pancreatitis • gallbladder disease • inflammatory conditions of the small intestine due to ingestion of wheat products (such as Celiac Sprue, gluten enteropathy, non-tropical sprue)
Thyroid Disorder	Current hyperthyroid or hypothyroid conditions

Indicators of Nutritional Need (continued)

Indicator	Description
Cancer	Current cancer for which treatment or condition affects nutritional status
Central Nervous System (CNS) Disorders	Current CNS disorders (such as epilepsy, cerebral palsy, neural tube defects, Parkinson's disease, and multiple sclerosis) that: • affect energy requirements and ability to feed self • alter nutritional status •
Maternal Smoking	Any daily smoking of tobacco products
Alcohol & Illegal Drug Use	Use of any illegal drugs
Infectious Diseases	Presence of infectious disease affecting nutritional status, such as: • pneumonia • meningitis • parasitic infection • rubella • listeriosis
Breastfeeding	Currently breastfeeding

Indicators of Nutritional Need (continued)

Indicator	Description
Inborn Errors of Metabolism	Gene mutations or gene deletions that alter metabolism, including, but not limited to: • Phenylketonuria (PKU) • Maple Syrup Urine Disease (MSUD) • Galactosemia • Hyperlipoproteinemia • Homocystinuria • Tyrosinemia • Histidinemia • Urea Cycle Disorders • Glutaric Aciduria • Methylmalonic Acidemia • Glycogen Storage Disease • Galactokinase Deficiency • Fructoaldolase Deficiency • Propionic Acidemia • Hypermethionemia
Developmental, Sensory, or Motor Delays	Developmental, sensory, or motor delays (such as delays due to head trauma, brain damage, birth injury) that: • interfere with ability to eat • restrict ability to chew or swallow • require tube feeding

Indicators of Nutritional Need (continued)

Indicator	Description
Homeless	Woman lacks a fixed, regular nighttime residence; or has residence in a shelter, institution for temporary residence, the residence of another individual used for temporary accommodation, or a place not designed or usually used for accommodating people
Recipient of Abuse	Within the past 6 months, has been abused emotionally, physically, or sexually
Eating Disorder	Condition in which the woman has a distorted sense of body image and fear of becoming fat. Symptoms may include: • self-induced vomiting • abuse of laxatives and enemas • periods of starvation • use of appetite suppressants or diuretics • self-induced, marked weight loss
Migrant	Member of a family where, within the past 24 months, at least 1 individual has worked in agriculture on a seasonal basis and has a temporary home for this work

Indicators of Nutritional Need (continued)

Indicator	Description
Nutrient Deficiency Diseases	Diagnosis of a nutritional deficiency or disease caused by insufficient dietary intake of nutrients such as: • Protein Energy Malnutrition (PEM) • Scurvy • Rickets • Beri Beri • Hypocalcemia • Osteomalacia • Vitamin K Deficiency • Pellagra • Cheilosis • Menkes Disease • Xerophthalmia
Pregnancy at a Young Age	Conception date or date of LMP $\leq$ 17 years of age
High Parity & Young Age	Under age 20 at conception of most recent pregnancy and 3 or more previous pregnancies (≥20 weeks gestation)

Indicators of Nutritional Need (continued)

Indicator	Description
Hypoglycemia	Low blood sugar level
Other Medical Diseases & Conditions	Medical diseases or conditions and their treatments that affect nutritional status including, but not limited to: • Juvenile Rheumatoid Arthritis • Lupus Erythematosus • Cystic Fibrosis
Genetic & Congenital Disorders	Genetic and congenital disorders that affect nutritional status, metabolically or mechanically, including, but not limited to: • Down's Syndrome and • cleft lip or palate
Drug Nutrient Interactions	Use of medications that interfere with nutrient intake or utilization such that nutritional status is affected

Indicators of Nutritional Need (continued)

Indicator	Description
Food Allergies	Reaction to a food that causes an adverse immunologic response or hypersensitivity
Lactose Intolerance	Woman has insufficient production of the enzyme lactase causing an inability to digest the milk sugar lactose
Major Surgery, Trauma, Burns	Recent major surgery, trauma, burns: - within past 2 months such that nutritional status is affected, or >2 months if doctor diagnoses need for continued nutritional support
Depression	Woman is diagnosed by a physician as having depression
Severe Dental Problems	Dental problems so severe that they affect the ability to ingest adequate quantity or quality of foods, including, but not limited to: - tooth decay - periodontal disease - ineffectively replaced teeth - tooth loss - gingivitis
Alcohol Use	Any use of alcohol

Indicators of Nutritional Need (continued)

Indicator	Description
Lack of or Inadequate Prenatal Care	Prenatal care visits that do not meet recommendations: Weeks Gestation Number of Visits 14-21 0 or unknown 22-29 ≤1 30-31 ≤2 32-33 ≤3 ≥34 ≤4
Limited Ability to Make Feeding Decisions and/or Prepare Food	Woman has limited ability to make feeding decisions and/or prepare food, including individuals who are: • ≤17 years old • mentally disabled/delayed, including clinically depressed • physically disabled to a degree that restricts or limits food preparation abilities • currently using or have history of abusing alcohol/drugs

Indicators of Nutritional Need (continued)

Indicator	Description
Failure to Meet USDA/DHHS Dietary Guidelines for Americans	Poor diet (documented by dietary assessment)
Vegan Diet	Consumption of plant–origin foods only (eating no animal products or foods made with animal ingredients)
Highly Restrictive Diet	Diet low in calories, severely limiting or involving high risk eating patterns
Pica	Craving or ingestion of non-food items such as: clay, laundry or corn starch, dirt, ashes, paint chips, or large quantities of ice or baking soda

Summary

Pregnancy	Pregnancy begins with conception, when a man's sperm fertilizes a woman's egg. A full-term baby develops in **38 weeks**, or **9 months**. These 9 months are divided into 3 three-month periods called trimesters.
Diet Affects Fetus and the Pregnant Woman	What a woman eats during her pregnancy may affect: • fetal development, • delivery, and • her comfort and emotions.
Nutrition Recommendations	Pregnant women should: • eat a variety of foods. • eat the recommended servings from each food group using the *Food Guide Pyramid* as a guide. • gain weight as recommended for her pre-pregnancy weight and trimester. • take daily supplements as recommended by the health care provider. • avoid weight reduction diets, sodium-restricted diets and diuretics; harmful substances (such as alcohol, tobacco and drugs); and excessive fat, salt, caffeine, sugar, and artificial sweeteners. WIC recommends that a normal weight pregnant woman gain between **25** to **35 pounds**.

Summary (continued)

Substance Abuse & Pregnancy	Drug use during pregnancy can cause serious problems for the embryo/fetus such as: • low birth weight, • hepatitis, • human immunodeficiency virus (HIV), • developmental problems, and • early death.
Common Pregnancy-Related Problems	Common pregnancy-related problems for women include: • anemia, • constipation, • heartburn, • hemorrhoids, • leg cramps, • nausea, and • swelling.
Indicators of Nutritional Need	There are many indicators of nutritional need that make a pregnant woman eligible for WIC. These include anthropometric, biochemical, clinical, and dietary indicators.

Glossary

amniotic sac- The amniotic sac (also called amnion) is the "bag" in which the fetus grows and develops.

anemia- Anemia is a condition in which the blood is low in iron.

anthropometric indicator- An anthropometric indicator is information about a person's body measurements such as height and weight.

biochemical indicator- A biochemical indicator is information about a person's blood or urine such as hemoglobin (Hgb), hematocrit (Hct) , blood sugar, and blood leads levels.

Body Mass Index- Body Mass Index (BMI) is an indicator of nutritional status that is calculated by taking a person's weight and dividing it by her/his height squared. (BMI = Weight/(Height)²)

case study- A case study is a description of a person or situation that is studied to decide on the best plan of action.

Cesarean section- A cesarean section is the cutting of the walls of the abdomen and uterus for delivery of the fetus.

clinical indicator- A clinical indicator is information about a person's health history and present medical conditions.

conception- Conception is the beginning of pregnancy when a man's sperm fertilizes a woman's egg.

constipation- Constipation is bowel movements that are difficult or less frequent than usual.

depressants- Depressants are drugs, such as tranquilizers or sedatives, that slow the body down.

dietary indicator- A dietary indicator is information about a person's eating behaviors.

embryo- An embryo is the developing human from the time of conception to the end of the eight week after conception.

Glossary (continued)

fetus- The fetus is the developing human from about the ninth week after conception to birth.

Food Guide Pyramid- The *Food Guide Pyramid* is a food guide, in picture form, that shows what types and amounts of foods we need to eat each day to stay healthy.

hallucinogens- Hallucinogens are drugs that cause a feeling of "being high" or seeing things that are not real.

hemorrhoids- Hemorrhoids are painful dilated veins near the rectal area of the body.

inhalants- Inhalants are drugs that are breathed in for a feeling of "being high."

lactose intolerance- Lactose intolerance is a condition in which the body is unable to break down the sugar lactose, resulting in symptoms such as diarrhea and abdominal cramps.

marijuana- Marijuana is the drug that comes from the dried leaves of the hemp plant and is usually smoked.

narcotics- Narcotics are drugs that relieve pain or cause sleep.

nicotine- Nicotine is the drug found in tobacco.

placenta- The placenta is the organ in women that provides nutrients to the developing embryo/fetus.

role play- A role play is when 2 or more people act out a scene as though it was "real life." "Props" such as baby dolls or food models are not needed but may be helpful.

stimulants- Stimulants are drugs that produce a feeling of energy or alertness.

substance abuse- Substance abuse (or drug abuse) is the use of alcohol, tobacco, recreational drugs, and over-the-counter and prescription medications in a manner that is not medically or legally approved.

Glossary (continued)

<u>trimester</u>- A trimester is any of the 3 periods of three months into which a pregnancy is divided.

<u>uterus</u>- The uterus (or womb) is the part of a woman in which a developing embryo/fetus develops.

Progress Check

1. Mark the following as "TRUE" or "FALSE"

   _____ A full-term baby develops in 38 weeks.

   _____ The fertilized egg is called an "embryo" for the first eight weeks of life and a "fetus" after eight weeks.

   _____ WIC recommends that most pregnant women gain between 25 to 35 pounds throughout their pregnancy.

   _____ All pregnant women gain weight at exactly the same rates.

   _____ A baby whose mother does NOT gain enough weight during her pregnancy is more likely to grow poorly in the uterus, be small for gestational age, and/or be born prematurely.

   _____ A woman who gains too much weight during her pregnancy may have gestational diabetes, difficulty at delivery, high blood pressure, and/or problems losing weight after the baby is born.

2. For each of the following stages of embryo/fetal development, identify the trimester in which it occurs. Write in "1" for 1st trimester, "2" for 2nd trimester, and "3" for 3rd trimester.

   _____ Brain, eyes, spinal cord, liver, arms, legs and pancreas develop.

   _____ Hair grows on head; eyebrows and eyelashes begin to grow.

   _____ Fetus can see and hear.

   _____ Mother begins to feel movement such as kicking.

   _____ Heart begins to beat.

Progress Check (continued)

3. The amount of weight a pregnant woman should gain is based on her

    _____ weight.

4. Name 3 problems common to pregnant women.

5. For each of the food groups listed in the chart below, write in the number of
    servings recommended for a pregnant woman.

Food Group	Number of Servings
Breads, Cereals and Grains	
Vegetables	
Fruits	
Milk Products	
Protein Foods	

Progress Check (continued)

6. Match the common pregnancy-related problem to a possible solution.

Problem		**Solution**
_____	Anemia	A. Avoid lying down flat. Raise the head when sleeping.
_____	Constipation	B. Eat foods high in iron and Vitamin C.
_____	Heartburn	C. Avoid standing for long periods of time.
_____	Leg Cramps	D. Increase the amount of fiber in the diet.
_____	Nausea	E. Keep the legs warm for good blood flow.
_____	Swelling	F. Avoid brushing teeth right after waking up.

7. List 2 effects of smoking (nicotine use) during pregnancy.

8. List 2 effects of drinking alcohol during pregnancy.

Progress Check (continued)

9. List 2 common effects of using recreational drugs such as stimulants during pregnancy.

10. Identify the following indicators of nutritional need for a pregnant woman. Write in "A" for anthropometric, "B" for biochemical, "C" for clinical, and "D" for dietary.

    _____ diabetes

    _____ low weight gain or weight loss during pregnancy

    _____ smoking cigarettes

    _____ low Vitamin A intake

    _____ congenital blood disorder (ie: sickle cell anemia)

Learning Activities

The following activities are included and recommended for interactive learning:

- Learning Activity 1: Trimesters of Pregnancy
- Learning Activity 2: Discussion of Pregnancy Issues
- Learning Activity 3: Observations
- Learning Activity 4: Case Studies
- Learning Activity 5: Role Plays

Activity 1: Trimesters of Pregnancy

Learning Objectives

After completing this activity, the CNW will be able to:

- describe what happens during the 3 trimesters of pregnancy.

Instructions

1. Ask your mentor or supervisor for a CD-ROM, pamphlet, book, or video that describes pregnancy.

2. View the video or CD-ROM and/or review the books and reading materials on pregnancy.

3. Fill in the chart on the next page. Write in major developments for each trimester.

4. Discuss your findings with your supervisor.

Activity 1: Trimesters of Pregnancy (Continued)

Trimester	Description
1ˢᵗ	
2ⁿᵈ	
3ʳᵈ	

Activity 2: Discussion of Pregnancy Issues

Learning Objectives

After completing this activity, the CNW will:

- be familiar with some of the pregnancy issues in WIC.

Instructions

1. Have your supervisor or mentor arrange for you to spend about 1 hour with a WIC staff person.

2. Ask the staff person to discuss her/his experiences with pregnancy issues at WIC.

3. Ask questions such as:

    - *What nutrition problems seem to be most common among the pregnant participants you see?*

    - *What are some common indicators of nutritional need for pregnant women?*

    - *What are some difficulties you have had in assessing a pregnant woman's nutritional status?*

    - *What suggestions do you have that would help a new staff person be ready to address the needs of pregnant women?*

4. Write down your notes on the next page.

5. When you are finished, discuss your findings with your mentor or supervisor.

Activity 2: Discussion of Pregnancy Issues (Continued)

Notes:

What nutrition problems seem to be most common among the **pregnant** participants you see?

What are some common indicators of nutritional need for **pregnant women**?

What are some difficulties you have had in assessing a **pregnant woman's** nutritional status?

What suggestions do you have that would help a new staff person be ready to address the needs of **pregnant women**?

Activity 3: Observations

Learning Objectives

After completing this activity, the CNW will be able to explain how to:
- interview a pregnant woman,
- assess a pregnant woman's nutritional status,
- prioritize needs, and
- provide individual education.

Instructions

1. Have your mentor or supervisor arrange for you to observe several individual nutrition education sessions with a pregnant woman, such as a

2. Observe the staff person as s/he:
    - assesses the woman's needs/problems,
    - prioritizes these needs/problems, and
    - provides individual education.

3. Write your notes on the next page.

4. Discuss your observations with your mentor or supervisor.

Activity 3: Observations (Continued)

Notes:

Activity 4: Case Studies

Learning Objectives

After completing this activity, the CNW will be able to explain how to:

- assess a pregnant woman's anthropometric, biochemical, clinical, and dietary status.

Instructions

1. Read each of the five cases studies on the following pages.

2. Identify the woman's anthropometric, biochemical, clinical, and dietary status. Fill out the form following each case study.

3. Identify any referrals that would be made.

4. Talk to your supervisor or mentor if you need help.

5. When you are finished, discuss your responses with your supervisor or mentor.

Case Study 1:
Rebecca is 26 years old. The following information is available:
- height is 5 feet, 1 inch.
- pre-pregnancy weight is 110 pounds.
- current weight is 112 pounds.
- last menstrual period (LMP) was 2 months ago.
- Hematocrit is 32.0%.
- smokes ½ pack (10 cigarettes)/day.
- 24-hour recall shows that she:
  - rarely eats Vitamin A-rich foods and
  - eats a diet high in fried foods.

Assessment:
Pre-pregnancy weight: normal   overweight   underweight

Number of weeks pregnant:

Weight gain:

*What are her **anthropometric** risks?*

*What are her **biochemical** risks?*

*What are her **clinical** risks?*

*What are her **dietary** risks?*

Referrals:

Activity 4: Case Studies (Continued)

Case Study 2:
Cassandra is 16 years old. The following information is available:
- height is 5 feet, 7 inches.
- pre-pregnancy weight is 130 pounds.
- current weight is 137 pounds.
- last menstrual period (LMP) was 1 month ago.
- Hgb is 10.3 g/dl.
- has bruises on her arm and says her boyfriend beats her.
- 24-hour recall shows that she:
  - ➢ rarely eats Vitamin C-rich foods and
  - ➢ does not eat vegetables.

Assessment:
Pre-pregnancy weight: normal   overweight   underweight

Number of weeks pregnant:

Weight gain:

*What are her **anthropometric** risks?*

*What are her **biochemical** risks?*

*What are her **clinical** risks?*

*What are her **dietary** risks?*

Referrals:

Activity 4: Case Studies (Continued)

Case Study 3:

Rosaria is 23 years old. The following information is available:
- height is 5 feet, 9 inches.
- pre-pregnancy weight is 140 pounds.
- current weight is 143 pounds.
- last menstrual period (LMP) was 2 months and 1 week ago.
- Hgb is 11.3 g/dl.
- She is temporarily living in a motel.
- 24-hour recall shows that she drinks only 1 cup of milk/day and no other milk products.

__Assessment:__

Pre-pregnancy weight: normal   overweight   underweight

Number of weeks pregnant:

Weight gain:

*What are her **anthropometric** risks?*

*What are her **biochemical** risks?*

*What are her **clinical** risks?*

*What are her **dietary** risks?*

__Referrals__:

Activity 4: Case Studies (Continued)

Case Study 4:
Xena is 30 years old. The following information is available:
- height is 5 feet, 6 inches.
- pre-pregnancy weight is 175 pounds.
- current weight is 183 pounds.
- last menstrual period (LMP) was 21 weeks ago.
- Hgb is 10.3 g/dl.
- she has not seen a doctor since she became pregnant.
- 24-hour recall shows that she has a diet low in protein.

Assessment:
Pre-pregnancy weight: normal   overweight   underweight

Number of weeks pregnant:

Weight gain:

*What are her **anthropometric** risks?*

*What are her **biochemical** risks?*

*What are her **clinical** risks?*

*What are her **dietary** risks?*

Referrals:

Activity 4: Case Studies (Continued)

Case Study 5:
LaShonda is 21 years old. The following information is available:
- height is 5 feet, 3 inches.
- pre-pregnancy weight is 160 pounds.
- current weight is 160 pounds.
- last menstrual period (LMP) was 2 months ago.
- Hgb is 11.2 g/dl.
- She has a 7-month old infant son.
- 24-hour recall shows that she rarely eats fruits or vegetables.

Assessment:
Pre-pregnancy weight: normal   overweight   underweight

Number of weeks pregnant:

Weight gain:

*What are her **anthropometric** risks?*

*What are her **biochemical** risks?*

*What are her **clinical** risks?*

*What are her **dietary** risks?*

Referrals:

Activity 5: Role Plays

Learning Objectives

After completing this activity, the CNW will be able to explain how to:

- interview a pregnant woman,
- assess her nutritional status,
- prioritize her needs, and
- provide individual education.

Background

A role play is a scenario in which 2 or more people act out a scene as though it was "real life". Props are not needed but may be helpful.

Instructions

1. Ask your mentor, supervisor, or a co-worker to role play any 3 of the 5 roles (A-E) described on the following page.

2. Using the information you have learned about prenatal nutrition, act out the role of a WIC CNW in session with each of these 3 pregnant women. **Make sure to promote breastfeeding during each session.**

3. Mentor/Supervisor/Co-Worker: Using the role plays as your guide, act out the role of the participant. Try to be as realistic as possible.

4. After each session, ask your co-worker to tell you what s/he noticed. Make sure to ask for your strengths as well as weaknesses.

5 Participants

Role Play A	Debbie Coleman is 22 years old. She is 15 weeks pregnant. She is 4 feet, 11 inches tall and weighs 157 pounds. Her pre-pregnancy weight is 153 pounds. Her hemoglobin is 10.6 g/dl. She smokes about 20 cigarettes/day. Her 24-hour recall shows that she eats very little fruit and no vegetables.
Role Play B	Grace Nguyen is 15 years old. She is 1 month pregnant. She is 5 feet, 5 inches tall and weighs 122 pounds. Her pre-pregnancy weight is 120 pounds. Her hemoglobin is 12.0 g/dl. She lives in a homeless shelter. Her 24-hour recall shows she eats very few protein foods.
Role Play C	Tina Dickson is 24 years old. She is 21 weeks pregnant and has not gone to see her doctor. She is 5 feet, 11 inches tall and weighs 215 pounds. Her pre-pregnancy weight is 200 pounds. Her hemoglobin is 12.8 g/dl. Her 24-hour recall shows she eats a diet low in Vitamin C-rich foods.
Role Play D	Evita Juarez is 26 years old. She is 8 months pregnant. She is 5 feet, 4 inches tall and weighs 160 pounds. Her pre-pregnancy weight is 135 pounds. Her hemoglobin is 10.2 g/dl. Her 24-hour recall shows she eats a diet low in milk products and Vitamin A-rich foods.
Role Play E	Tanya Wilson is 21 years old. She is 5 months pregnant. She is 6 feet tall and weights 183 pounds. Her pre-pregnancy weight is 170 pounds. Her hemoglobin is 9.8 g/dl. Her 24-hour recall shows she eats a high fat diet.

Progress Check Answers

1. Mark the following as "TRUE" or "FALSE".

   TRUE A full-term baby develops in 38 weeks.

   TRUE The fertilized egg is called an "embryo" for the first eight weeks of life and a "fetus" after eight weeks.

   TRUE   WIC recommends that most pregnant women gain between 25 to 35 pounds throughout their pregnancy.

   FALSE   All pregnant women gain weight at exactly the same rates.

   TRUE A baby whose mother does NOT gain enough weight during her pregnancy is more likely to grow poorly in the uterus, be small for gestational age, and/or be born prematurely.

   TRUE A woman who gains too much weight during her pregnancy may have gestational diabetes, difficulty at delivery, high blood pressure, and/or problems losing weight after the baby is born.

2. For each of the following stages of embryo/fetal development, identify the trimester in which it occurs. Write in "1" for 1st trimester, "2" for 2nd trimester, and "3" for 3rd trimester.

   _1_   Brain, eyes, spinal cord, liver, arms, legs and pancreas develop.

   _2_   Hair grows on head; eyebrows and eyelashes begin to grow.

   _3_   Fetus can see and hear.

   _2_   Mother begins to feel movement such as kicking.

   _1_   Heart begins to beat.

Progress Check (continued)

3. The amount of weight a pregnant woman should gain is based on her

 _____***pre-pregnancy***_____ weight.

4. Name 3 problems common to pregnant women.
   Any 3 of the following responses are correct:
   - ***anemia,***
   - ***constipation,***
   - ***heartburn,***
   - ***hemorrhoids,***
   - ***leg cramps,***
   - ***nausea, and***
   - ***swelling.***

5. For each of the food groups listed in the chart below, write in the number of servings recommended for a pregnant woman.

Food Group	Number of Servings
Breads, Cereals and Grains	*6-11*
Vegetables	*3-5*
Fruits	*2-4*
Milk Products	*3-4*
Protein Foods	*2-3*

Progress Check (continued)

6. Match the common pregnancy-related problem to a possible solution.

	Problem		**Solution**
B	Anemia	A.	Avoid lying down flat. Raise the head when sleeping.
D	Constipation	B	Eat foods high in iron and Vitamin C.
A	Heartburn	C	Avoid standing for long periods of time.
E	Leg Cramps	D	Increase the amount of fiber in the diet.
F	Nausea	E	Keep the legs warm for good blood flow.
C	Swelling	F	Avoid brushing teeth right after waking up.

7. List 2 effects of smoking (nicotine use) during pregnancy.

   Any 2 of the following responses are correct:
   - *miscarriage,*
   - *still birth,*
   - *premature birth,*
   - *low birthweight, and*
   - *premature death.*

8. List 2 effects of drinking alcohol during pregnancy.
   Any 2 of the following responses are correct:
   - *miscarriage,*
   - *Fetal Alcohol Syndrome,*
   - *low IQ, and*
   - *developmental delays.*

Progress Check (continued)

9. List 2 common effects of using recreational drugs such as stimulants during pregnancy.

    Any 2 of the following responses are correct:
    - ***heart, brain and liver damage,***
    - ***abnormal bone, stomach, kidney and intestine development,***
    - ***misscariage,***
    - ***stillbirth,***
    - ***premature birth, and***
    - ***Sudden Infant Death Syndrome (SIDS).***

10. Identify the following indicators of nutritional need for a pregnant woman. Write in "A" for anthropometric, "B" for biochemical, "C" for clinical, and "D" for dietary.

    _C_   diabetes

    _A_   low weight gain or weight loss during pregnancy

    _C_   smoking cigarettes

    _D_   low Vitamin A intake

    _B_   congenital blood disorder (ie: sickle cell anemia)